MANUAL 301 Mk11

Liteville

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and at liteville.com

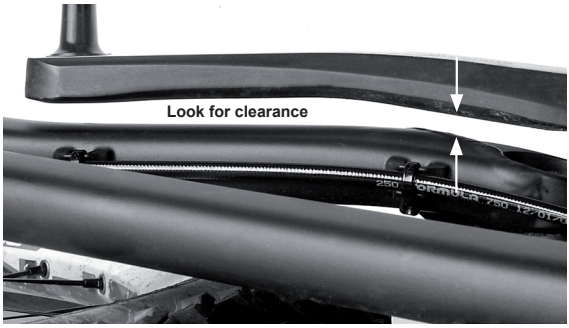
Limits for the Liteville 301 Frame

Please be aware, not all parts available on the market can be used on the Liteville 301 frame and some parts simply should not be used! The following parts have limits:

Fork

Only forks with a maximum built height of 565 mm are permitted for use.

Crank/Bottom Bracket



Not all available crank/bottom bracket units can be used. The bottom bracket shell width is 73mm.
Make sure the left crank does not collide with the left chain stay and the right hand crank does not collide with the SCS chainguide (if used).
Since the Liteville 301 frame is only suitable for Shimano E-Type front derailleurs you need a bottom bracket that can be used with one.

Seatpost

The Liteville 301 frame needs a seatpost with a diameter of 34.9 mm.

To prevent frame damage, the seatpost needs to be inserted down to the mark on the seat tube. Frames with Works Finish do not have a laser etching. Nevertheless, you need to adhere to the minimum inserting depth (140mm, see picture on left). N

What is the minimum length of a seat post adapter shim?

Adaption of height adjustable seat posts to Liteville frames made easier. Thanks to the now completed long time test results, we can now approve all Liteville 301 frames (backdating to Mk7) for seat post adapter shims of minimum length 120 mm instead of the previously published 150 mm. This approval is without rider weight limit. From Mk8 onwards, the valid minimum reduction shim length is, as marked on the seat tube, 120 mm for a seat post extension of up to 200 mm and 140 mm for extension length above 200 mm.
CAUTION: the use of seat post shims still requires adhesion to the minimum insert depth as required by the frame!
And what is the required length of seatpost in the shim? The use of seat post shims still requires adhesion to the minimum insert depth of the seat post!

Wheels/Tires

The Liteville 301 frame is compatible with tires up to 2.5“. Frames size S and XS have limited clearance in the area of the chain stay yoke due to shorter chain stays. The 301 XS frame from Mk9 onwards is exclusively designed for use with a 24” rear wheel.

Seat clamp

In case you do not want to use the original Syntace clamp you need a clamp with a diameter of 38mm due to the oversize build of the seat tube. Watch for enough clearance of the rear triangle during compression. To test, deflate shock completely and carefully compress the rear entirely.
Note: On the Liteville 301 in frame size XS, unlike with all the other frame sizes, the Syntace Superlock2 has to be mounted with the lever facing the front.

Shifter cable

For a trouble-free installation use cable housing with a 4 mm outside diameter, for example Shimano SIS-SP41.

Rear shock / Shock mounts

Do not use shocks with an installation length other than 190 mm. Shock stroke can not exceed 50 mm.
Tip: The Liteville 301 frame has a special low-ratio suspension design and does not work well with every shock available. Our shocks have been specifically tuned for our frames.
Hint: A slight brush of the rear wheel at full compression is nothing to worry about. It will damage nothing and may only leave a brush mark on the seat tube.

Brakes

The Liteville 301 frame has been designed exclusively for use with disc brakes. From Mk8 onwards, the frame comes with 7” PM tabs allowing the use of PM disc brake callipers directly without the necessity for an adapter. For the use of rotors > than 180 mm, please contact your respective brake manufacturer. The minimum rear rotor diameter is 180 mm and the maximum diameter is 210 mm.

Installation

Frame preparation

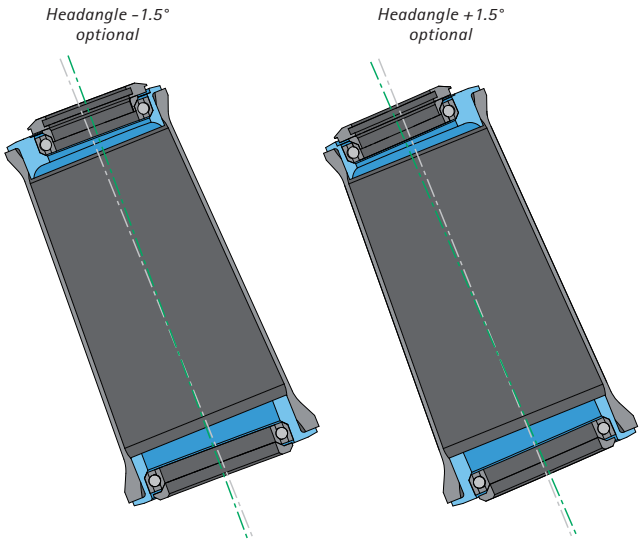
The contact surfaces for bearings and brakes etc. have already been prepped at the factory – you do not need to face anything to install headset, bottom bracket or brakes. Should any problems arise despite careful factory frame preparation, please get in touch with Syntace GmbH directly.

Headset / fork

The headset bearings have been pressed into the frame by the factory. In case you need to change bearings, do not forget to use grease and make sure the bearings are pressed in evenly and completely. It is best to use a special tool for the task.

Headangle

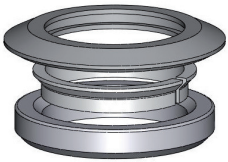
The Liteville 301 Mk11 is equipped with the Syntace VarioSpin headset. By changing the headset cups, the headangle can be changed and fine tuned according to your needs. Supplied with the frame are concentric bearing cups. The separately available Vario-headset cups (as indicated in blue below)
Allow the headangle to be changed +/- 1.5°.



Fork installation

First, install both seals (grey lip on the outside, black o-ring on the inside) on the cover of the SuperSpin headset.
Install the larger of the two slotted rings (the base plate, see picture) onto the steerer tube. Insert the steerer tube into the head tube, add the smaller slotted ring onto the steerer tube and install the black cover plate. Make sure the fork does not collide with the frame when turning.
Now slide the lower (depending on fork, either the tapered or the 1 1/8" one) of the two slotted bearing cones onto the steerer tube. If using a 1 1/8" fork you now need to install the lower 1 1/8" reducer in the lower bearing (do not forget to grease).
Insert fork into the frame, slide upper 1 1/8" cone onto steerer tube and install the cover plate.

SuperSpin tapered, lower 1.5, upper 1 1/8



Tip 1: Before installing the cover plate, grease bearing heavily. It will keep moisture away and aids easy spinning.
Tip 2: Pull the headset tight with the adjustment bolt, then loosen the bolt again. Only now adjust bearing play. With that procedure you can make sure that the bearings have been seated correctly and will spin easily.

Make sure the fork does not hit the down tube when spinning the bar.

Bar / Stem

Install bar and stem according to manufacturer's instructions onto the steerer tube.
Hint: test ride first with uncut steerer tube. You would not be the first person to be ticked off because you cut the steerer tube too short!

Shift levers

Install levers according to manufacturer's specifications.

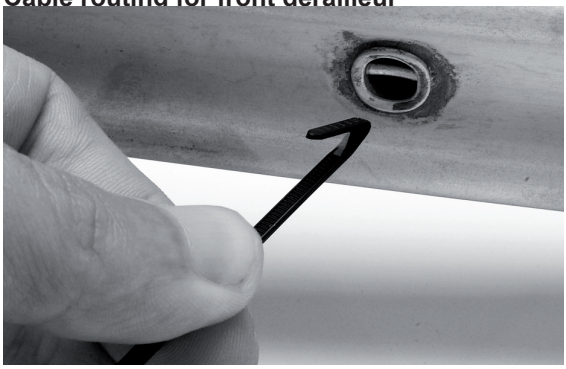
Bottom bracket / crank & front derailleur

Liberally grease contact surfaces for the bottom bracket. Fix the E-Type derailleur with the bolt (supplied by Shimano).
Important: Do not use a spacer between BB and derailleur.
Now install both BB bearing cups according to installation instructions. Use enough grease! From experience we know that especially outboard bearings tend to creak if not enough grease has been applied to the contact surfaces.
Now tighten the 5 mm Allen screw of the derailleur according to manufacturers specifications and install crankset. Make sure there is enough room for rotation between crank arms and frame – test for enough clearance.

Installing cables on the down tube

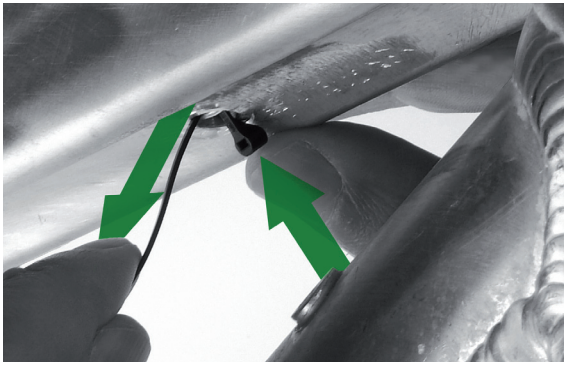
You can mount the rear shifter cable and the rear brake line on top of the pads to achieve an optimal routing. We recommend the installation of the cable as here shown to the left around the head tube.

Cable routing for front derailleur

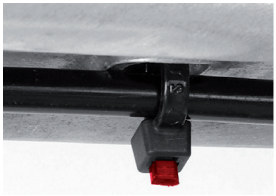


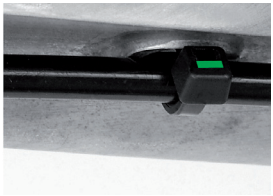
Before you can install the cable housing, you need to unbolt the front shock mount and fold down the shock. To mount the cable housing, you will find special mounts on the bottom side of the top tube.

Proceed as follows:
Sharply bend a zip tie about 10 – 15 mm behind the tip so get something close to a hook. Now insert the hooked zip tie into the cable mount. Make sure you insert only far enough so the tip snaps over the little cross ridge.

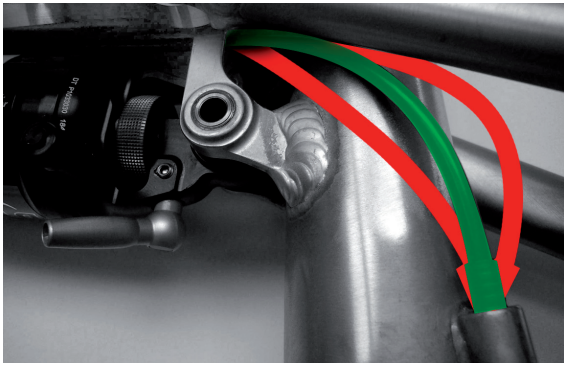


By pulling and pushing, you can direct the zip tie all the way through until the head is at the top tube. Now you can install the cable housing (and the optional cable housing for an adjustable seat post. Note: only pull the zip tie tight by hand!



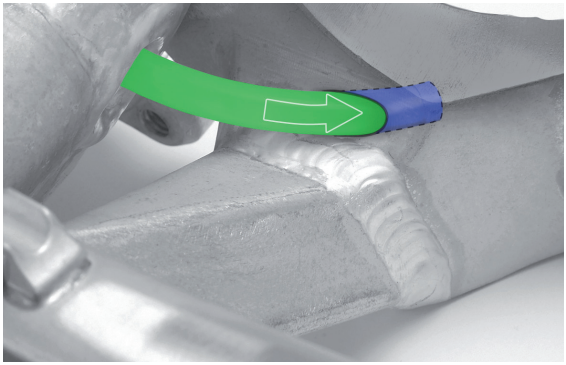


Cut the zip tie right at the head and turn the heads all the way to the top tube so they do not stick out.



The shifter cable is running between top tube and shock. Let the shifter cable run through left rear shock mount and seat tube. The shifter housing for the E-type derailleur should neither run in a large arch nor in a very “direct” way to ensure good function.

Cable routing for the rear derailleur



The shifter cable for the rear derailleur is being routed directly through the seat tube into the chain stay. To protect the cable even better from corrosion, we use an additional, flexible tube.

Hint: Do not remove the transparent plastic tube. In case you did remove it, reinstall it by pushing it thoroughly into its seat (blue in the picture) and do NOT use lubrication.

The exit for the shifter cable is at the lower end of the right chain stay.

Changing a shifter cable housing

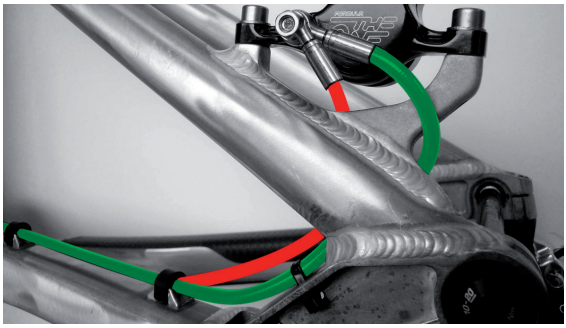
- Leave the transparent tube in place
- Cut the new cable housing in a skewed fashion

- Spray a little silicone spray into the guide tube
- Insert shifter cable from the front until it is at the chain stay yoke
- Use the rest of the cable housing as a handle by rolling it up. Let the housing find its way by turning and pushing at the same time. It will work even easier if the rear triangle will be moved up and down by about 1 – 2cm (remove shock mount).
- Push further until the housing hits the Horst link and let it find its way though the hole by turning and pushing

- Now cut the ends of the housing as usual. Done!

Routing of brake line

The brake lines and shifter cables are being routed continuously. Please to not over-tighten the bolts of the clamps to avoid crimping. If crimped, shifting and braking lines will lose function.



Be aware that the brake line will be shortened during compression. Leave it long enough!

Use the included clips for mounting the brake line on the left chain stay. If you use zip ties, squeaking noises may occur.
Be aware: The routing pictured is for brake callipers where you can turn the line towards the rear. It will vary with other brake models.

Rear derailleurs from Shimano:

All derailleurs starting from model year 2009 will work (only Shadow!). Installation of old derailleurs (with the large diameter housing bend) is not recommended on Liteville 301 frames from Mk8 on because they do not harmonize well with the new, low-profile routing.

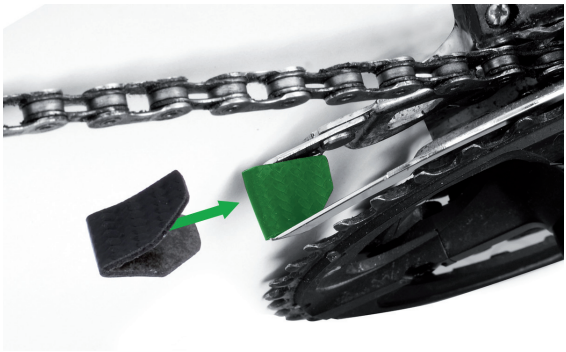
Rear derailleurs from SRAM:

SRAM X.7, X.9 and X.0 will fit - as well as all older SRAM rear derailleurs.
Reasons for preference of newer Shimano and SRAM derailleurs:

- Direct cable routing without unnecessary arcs
- Better protection against branches
- Reduced friction by avoiding large radii
- No crashing of derailleur against chain stay
- Reduced noise

Install and adjust the derailleur according to the manufacturer’s specifications.

Attention: For perfect protection, install the optional Syntace RockGuard II. There are different models for SRAM, Shimano Shadow and Saint models.



Tip: There is a sticker included for the front derailleur. Install it as pictured to reduce chain slap at the front derailleur.

Saddle, seat post and seat tube

Check the seat tube for edges and burrs. Remove them with fine sanding paper before inserting the seat post.

Attention: If fully inserted, the seat post may reach the “dent” for the E-type front derailleur. If you try to force it any deeper, you may damage seat post and/or frame.

Attention: Observe the “minimum insert” mark at the seat tube as described in the chapter about limits.

Tip: Cut the seat post to the “minimum insert” dimension after being sure that it works well. That way you can lower the seat post to the max.

Attention: Take note of the seatpost’s wear limit.
When frequently adjusting the height of your seatpost in muddy or dusty conditions, material wear actually takes place on the surface of both the seat tube and seatpost. The wear on carbon seatposts is much higher than on alloy seatposts due to the coated resin matrix/fibers used. To keep this wear to a minimum, we recommended removing the seatpost from the frame after every ride in wet/muddy conditions and then to clean it. The inside of the seat tube should also be cleaned with a rag. Check the diameter of the seatpost from time to time. At no position along the post, the diameter is allowed to become less than 34.7mm! If this is the case, the seatpost requires replacing to prevent the frame from being crushed resulting in possible deformation or cracking in the clamping area.

Syntace X-12 trough axle

The Syntace X12 through axle system is the only through axle system that allows adjudtment of track and camber.

The allen key bolt on the right hand drop out is purely for attachment of derailleur hanger and to clamp the thread insert. It does not require removal when removing the rear wheel!.

Note: The axle insert has been adjusted to your specific frame. This can be seen by the alignment of centre punch and clamping slit.

Setup

Adjustment of sag

For optimal performance, it is advisable to adjust the Liteville 301 precisely. Do it the following way:

• •Ride your Liteville 301 with full equipment (backpack, helmet etc.)

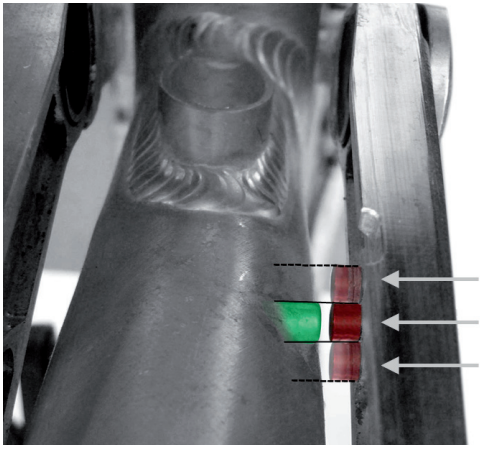
• Look down onto the sag indicator “Dynamic Level” and check the position of the two indicator pins..

Attention: Especially at night, one is tempted to reach down and feel the sag instead of looking down. We strongly discourage you from doing so; you may severely crush your fingers!

• If the two pins do not point at each other, adjust air volume in the shock. Either add or remove air.

• Our recommendation is pin-to-pin.

• You can see adjustment possibilities in the following picture.



Dynamic Level adjustments:

Soft: Max. pin above frame pin

Our recommendation: pin-to-pin

Hard: Max. pin below frame pin

Note: A small backpack may raise the weight on the rear axle enough to make an air volume adjustment necessary.

Adjustment of rebound:

• Ride at medium speed off a curb. The chassis should only bounce once.

• If the rebound is too fast (chassis bounces more than once), close the rebound circuit a bit.

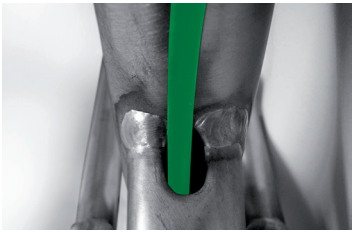
Please be aware: the rear end should not rebound too slowly either or else the suspension will “pack up” after riding over several obstacles in quick succession.

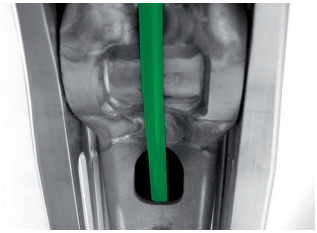
Please observe installation instructions and manual from the manufacturer of the shock.

Build-in interfaces

Adjustable seatpost with remote

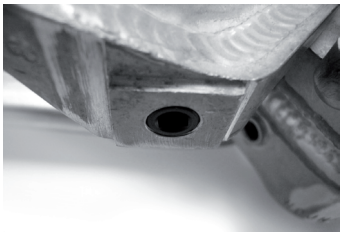
The Liteville 301 Mk8 is ready for installation of an adjustable seatpost with remote actuation. Optimum function is only guaranteed for posts where the cable is mounted at the seat clamp area and not at the head. Use only cable housing with an diameter of 4mm (for example Shimano SIS-SP41).



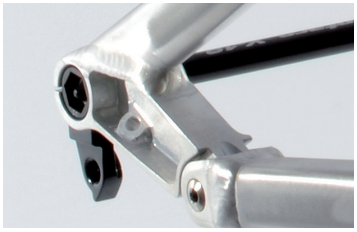


Syntace SCS Chain Guide

Integrated tabs for the patented Syntace SCS chain guide are standard from Mk8 onwards.
The Syntace SCS chain guide offers low weight and an unknown precision coupled with reliability for double and triple chainring setups.



RockGuard derailleur protector



Integrated tab for the patended Syntace RockGuard derailleur protector . Instead of continous trouble
with mis-adjusted gears, and every so often bent “soft derailleur hangers”, you have the choice of a superbly reliable function 365 days a year.

Maintenance and care

Bearings

All bearings used are greased for life and do not need to be disassembled to be repacked with grease. In case of a defective bearing you can order a new bearing from your dealer or from Liteville. When cleaning, do not let a strong jet of water enter the bearings (see section “washing”). Too much assumed “care” can reduce the bearing life by more than 20 000km of riding.

Headset

In case you need to change the headset you can order a new one through your dealer or from directly Liteville.

Bolts

All frame bolts used are high-tensile strength titanium bolts. They have been manufactured especially for our Liteville frames. In case of loss or damage you can order them through your dealer or from Liteville.

On all frame bolts a thread lock has been applied, so make sure you heat them with a hot air gun if you want to disassemble them. Use a thread lock (like Syntace Bond 48) when reinstalling!

From time to time make sure all bolts are still tightened– torque values can be found laser-etched onto the frame on black anodized frames. You will also find torque values in the rear of this manual.

Hint: Sometimes one needs to do the opposite of what one expects…for example, if it creaks up front, grease in the rear. The suspected creaking from the bottom bracket might not be caused there at all. Leave the BB alone and try this first:

- Remove cassette
- Apply copper paste thoroughly to rotor surface
- After re-installing cassette tighten with full torque

Washing

Never use a high-pressure washer to clean your frame! The high water pressure will force water into the bearings and premature corrosion and wear will follow. Dirt, blown away by high water pressure, will scratch the surface and mar it permanently. Additionally, do not use a garden hose water jet (or similar) on any of the frame pivot points to remove dirt. Instead, (if necessary, together with brush or sponge) clean pivot points only with water from a bucket or a hose with nozzle set to soft spray setting.
To clean your frame, first use water from a hose and then a soft sponge with warm water, preferably with a few drops of dishwashing detergent. Dry frame with a soft cloth. To achieve a nice sheen, use silicone spray and wipe with a soft cloth.

Important: make sure the silicone spray does not reach your brakes or rotors. Almost complete loss of braking power will be the result if silicon contaminates brakes. In case brakes are contaminated, clean rotors

with brake cleaner and install new brake pads!

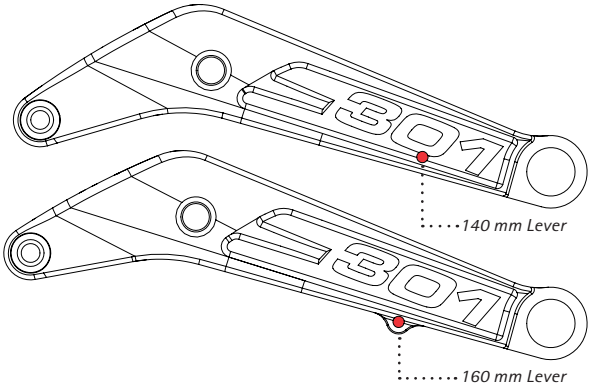
In addition to the available surfaces race black anodized and your custom color in powder coat, we offer in every production run a limited edition of Works Finish frames. The new Liteville Works Finish is a genuine raw aluminium surface, no imitation. You can see the irregular marks of the manual work.
Changes of surface color and stains are standard with this finish. Over time it develops the charm of natural patina on the Works Finish frame. The surface can be re-worked anytime with Scotch-Brite or can be coated.

You will find two Scotch-Brite pads included with every Works Finish frame. Please try their effectiveness in an area not immediately visible to make sure you will like it.

Logos on Works Finish:
You will find two logos cut from 3M material with the frame. If you stick them onto the frame analoguous to the anodized frame or in a different fashion – it is yours to decide!

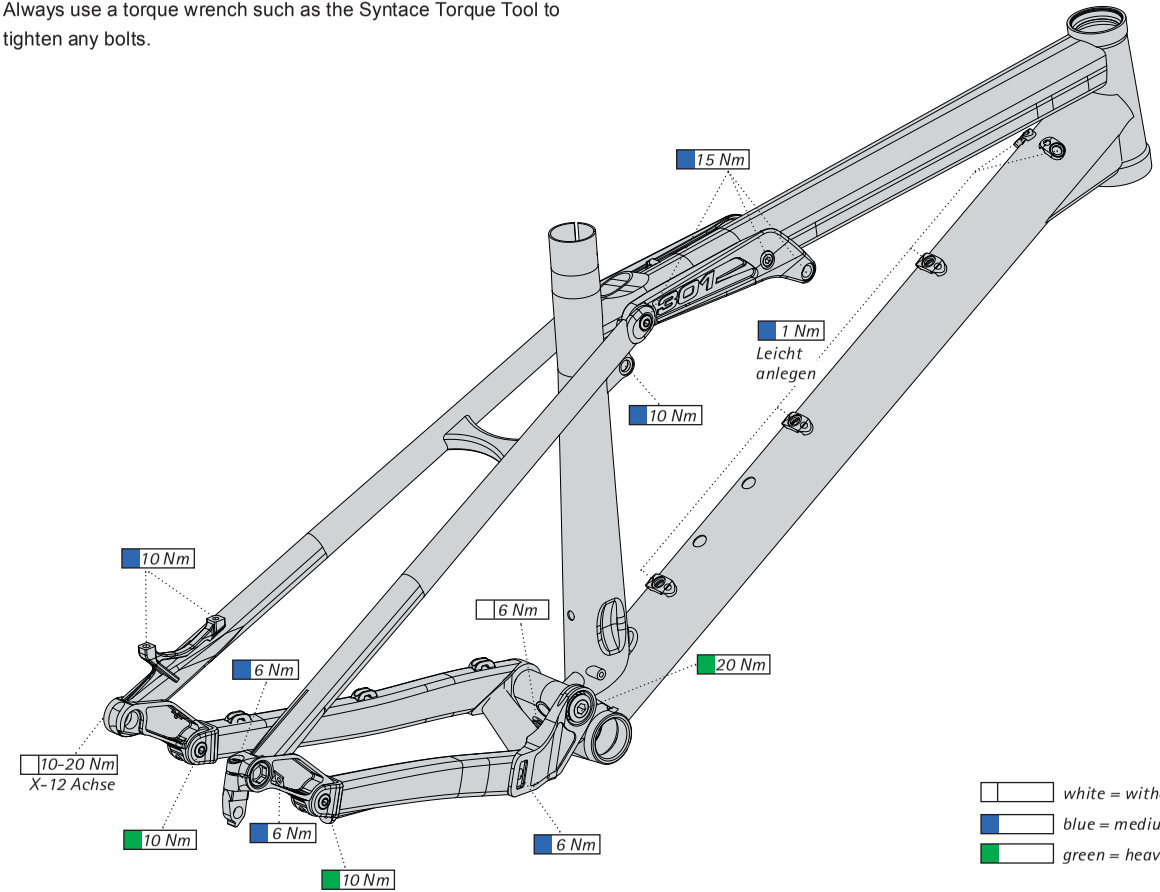
Travel identification:

You can see the lever travel also on the basis of the „Dynamic Level“ Sag-Indicators position:



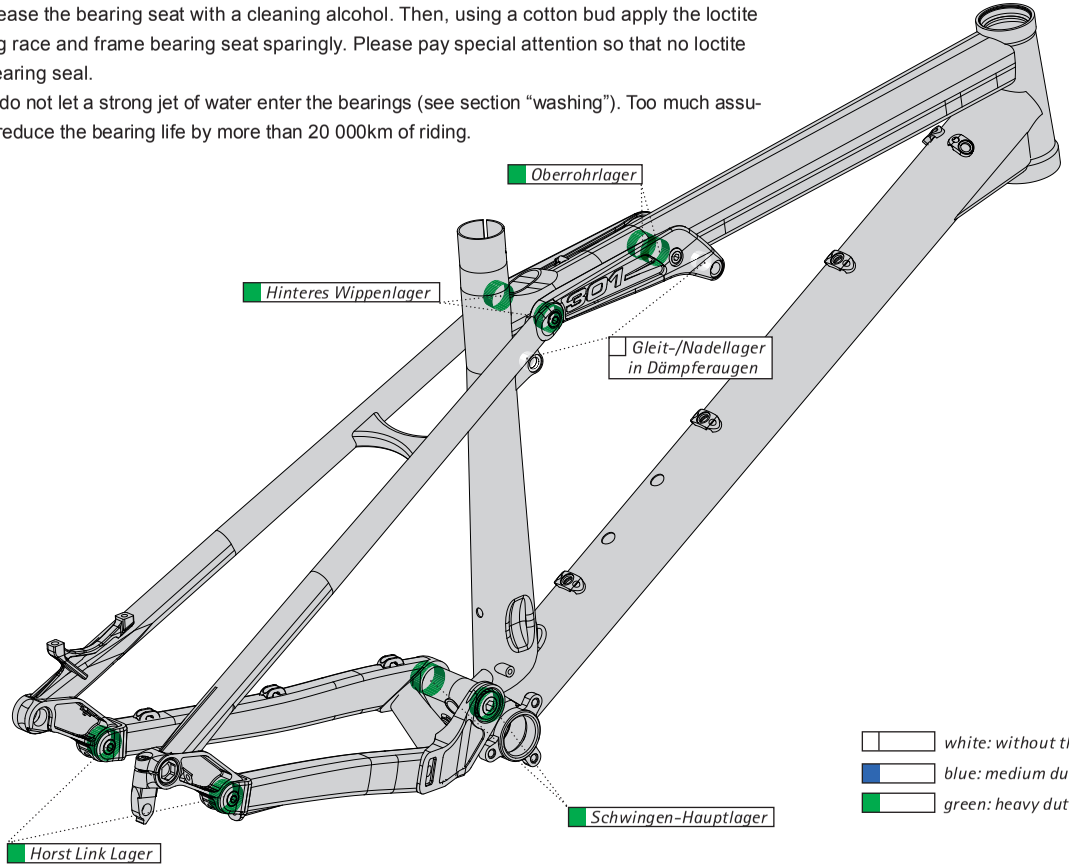
Maximum torque

Always use a torque wrench such as the Syntace Torque Tool to tighten any bolts.



Bearings with Loctite

If replaced, the highlighted bearings must be assembled using a high strength loctite (for eg. Loctite, Syntace Bond 48 Hochfest).
To do this, degrease the bearing seat with a cleaning alcohol. Then, using a cotton bud apply the loctite between bearing race and frame bearing seat sparingly. Please pay special attention so that no loctite flows into the bearing seal.
When cleaning, do not let a strong jet of water enter the bearings (see section “washing”). Too much assumed “care” can reduce the bearing life by more than 20 000km of riding.



Umrechnungstabelle psi → bar (MPa)

bar = 14,5035 psi

0-399 psi

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psi	0	1	2	3	4	5	6	7	8	9
0	bar	0,07	0,14	0,21	0,28	0,34	0,41	0,48	0,55	0,62
10	0,69	0,76	0,83	0,90	0,97	1,03	1,10	1,17	1,24	1,31
20	1,38	1,45	1,52	1,59	1,65	1,72	1,79	1,86	1,93	2,00
30	2,07	2,14	2,21	2,28	2,34	2,41	2,48	2,55	2,62	2,69
40	2,76	2,83	2,90	2,96	3,03	3,10	3,17	3,24	3,31	3,38
50	3,45	3,52	3,59	3,65	3,72	3,79	3,86	3,93	4,00	4,07
60	4,14	4,21	4,27	4,34	4,41	4,48	4,55	4,62	4,69	4,76
70	4,83	4,90	4,96	5,03	5,10	5,17	5,24	5,31	5,38	5,45
80	5,52	5,58	5,65	5,72	5,79	5,86	5,93	6,00	6,07	6,14
90	6,21	6,27	6,34	6,41	6,48	6,55	6,62	6,69	6,76	6,83
100	6,89	6,96	7,03	7,10	7,17	7,24	7,31	7,38	7,45	7,52
110	7,58	7,65	7,72	7,79	7,86	7,93	8,00	8,07	8,14	8,20
120	8,27	8,34	8,41	8,48	8,55	8,62	8,69	8,76	8,83	8,89
130	8,96	9,03	9,10	9,17	9,24	9,31	9,38	9,45	9,51	9,58
140	9,65	9,72	9,79	9,86	9,93	10,00	10,07	10,14	10,20	10,27
150	10,34	10,41	10,48	10,55	10,62	10,69	10,76	10,82	10,89	10,96
160	11,03	11,10	11,17	11,24	11,31	11,38	11,45	11,51	11,58	11,65
170	11,72	11,79	11,86	11,93	12,00	12,07	12,13	12,20	12,27	12,34
180	12,41	12,48	12,55	12,62	12,69	12,76	12,82	12,89	12,96	13,03
190	13,10	13,17	13,24	13,31	13,38	13,44	13,51	13,58	13,65	13,72
200	13,79	13,86	13,93	14,00	14,07	14,13	14,20	14,27	14,34	14,41
210	14,48	14,55	14,62	14,69	14,75	14,82	14,89	14,96	15,03	15,10
220	15,17	15,24	15,31	15,38	15,44	15,51	15,58	15,65	15,72	15,79
230	15,86	15,93	16,00	16,06	16,13	16,20	16,27	16,34	16,41	16,48
240	16,55	16,62	16,69	16,75	16,82	16,89	16,96	17,03	17,10	17,17
250	17,24	17,31	17,37	17,44	17,51	17,58	17,65	17,72	17,79	17,86
260	17,93	18,00	18,06	18,13	18,20	18,27	18,34	18,41	18,48	18,55
270	18,62	18,68	18,75	18,82	18,89	18,96	19,03	19,10	19,17	19,24
280	19,31	19,37	19,44	19,51	19,58	19,65	19,72	19,79	19,86	19,93
290	19,99	20,06	20,13	20,20	20,27	20,34	20,41	20,48	20,55	20,62
300	20,68	20,75	20,82	20,89	20,96	21,03	21,10	21,17	21,24	21,30
310	21,37	21,44	21,51	21,58	21,65	21,72	21,79	21,86	21,93	21,99
320	22,06	22,13	22,20	22,27	22,34	22,41	22,48	22,55	22,61	22,68
330	22,75	22,82	22,89	22,96	23,03	23,10	23,17	23,24	23,30	23,37
340		23,51	23,58	23,65	23,72	23,79	23,86	23,92	23,99	24,06
350	24,13	24,20	24,27	24,34	24,41	24,48	24,55	24,61	24,68	24,75
360	24,82	24,89	24,96	25,03	25,10	25,17	25,23	25,30	25,37	25,44
370	25,51	25,58	25,65	25,72	25,79	25,86	25,92	25,99	26,06	26,13
380	26,20	26,27	26,34	26,41	26,48	26,54	26,61	26,68	26,75	26,82
390	26,89	26,96	27,03	27,10	27,17	27,23	27,30	27,37	27,44	27,51

Umrechnungstabelle (MPa) bar → psi

0-29,9 bar

psi = 0,0689 bar

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bar	0,0	0,1	0,2	0,3	0,4	0,5	0,6	0,7	0,8	0,9
0	psi	1,5	2,9	4,4	5,8	7,3	8,7	10,2	11,6	13,1
1	14,5	16,0	17,4	18,9	20,3	21,8	23,2	24,7	26,1	27,6
2	29,0	30,5	31,9	33,4	34,8	36,3	37,7	39,2	40,6	42,1
3	43,5	45,0	46,4	47,9	49,3	50,8	52,2	53,7	55,1	56,6
4	58,0	59,5	60,9	62,4	63,8	65,3	66,7	68,2	69,6	71,1
5	72,5	74,0	75,4	76,9	78,3	79,8	81,2	82,7	84,1	85,6
6	87,0	88,5	89,9	91,4	92,8	94,3	95,7	97,2	98,6	100,1
7	101,5	103,0	104,4	105,9	107,3	108,8	110,2	111,7	113,1	114,6
8	116,0	117,5	118,9	120,4	121,8	123,3	124,7	126,2	127,6	129,1
9	130,5	132,0	133,4	134,9	136,3	137,8	139,2	140,7	142,1	143,6
10	145,0	146,5	147,9	149,4	150,8	152,3	153,7	155,2	156,6	158,1
11	159,5	161,0	162,4	163,9	165,3	166,8	168,2	169,7	171,1	172,6
12	174,0	175,5	176,9	178,4	179,8	181,3	182,7	184,2	185,6	187,1
13	188,5	190,0	191,4	192,9	194,4	195,8	197,3	198,7	200,2	201,6
14	203,1	204,5	206,0	207,4	208,9	210,3	211,8	213,2	214,7	216,1
15	217,6	219,0	220,5	221,9	223,4	224,8	226,3	227,7	229,2	230,6
16	232,1	233,5	235,0	236,4	237,9	239,3	240,8	242,2	243,7	245,1
17	246,6	248,0	249,5	250,9	252,4	253,8	255,3	256,7	258,2	259,6
18	261,1	262,5	264,0	265,4	266,9	268,3	269,8	271,2	272,7	274,1
19	275,6	277,0	278,5	279,9	281,4	282,8	284,3	285,7	287,2	288,6
20	290,1	291,5	293,0	294,4	295,9	297,3	298,8	300,2	301,7	303,1
21	304,6	306,0	307,5	308,9	310,4	311,8	313,3	314,7	316,2	317,6
22	319,1	320,5	322,0	323,4	324,9	326,3	327,8	329,2	330,7	332,1
23	333,6	335,0	336,5	337,9	339,4	340,8	342,3	343,7	345,2	346,6
24	348,1	349,5	351,0	352,4	353,9	355,3	356,8	358,2	359,7	361,1
25	362,6	364,0	365,5	366,9	368,4	369,8	371,3	372,7	374,2	375,6
26	377,1	378,5	380,0	381,4	382,9	384,4	385,8	387,3	388,7	390,2
27	391,6	393,1	394,5	396,0	397,4	398,9	400,3	401,8	403,2	404,7
28	406,1	407,6	409,0	410,5	411,9	413,4	414,8	416,3	417,7	419,2
29	420,6	422,1	423,5	425,0	426,4	427,9	429,3	430,8	432,2	433,7

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